

Do Apes Make "Monkey-Chain" Bridges?

Prof. Gudger Explains How Travellers and School Books for 300 Years Have Told of the Way Monkeys Cross Alligator-Infested Streams -But Science Can Find No Proof of This Interesting Simian Accomplishment

DO monkeys form bridges to cross alligator-infested streams in South America by clinging to one another's tails?

Explorers, historians and geographers have stated this with great positiveness over and over again for 300 years.

Our school books and geographies have taught this for many generations. The large picture on this page is, in fact, taken from Holmes's "Fourth Reader," and a somewhat similar illustration can be found in Mitchell's "New Primary Geography."

But science now challenges this interesting statement about the accomplishments and resourcefulness of South American monkeys. Recent research by the authorities of the New York American Museum of Natural History fails to corroborate it.

Professor E. W. Gudger, professor of biology, writing in *Natural History*, the journal of the American Museum, has traced the origin of this story, he thinks, to the Jesuit priest, Father Jose de Acosta, who published a book of travels in Latin in 1589 with the following statement:

"Going from Nombre de Dios to Panama I did see in Capira one of these monkeys leape from one tree to another, which was on the other side of a river, making me much to wonder. They leape where they list, winding their tails about a branch to shake it; and when they will leape further than they can at once, they use a pretty devise, tying themselves by the tails one of another, and by this means make as it were a chaine of many; then doe they launch themselves forth, and the first, helpe by the force of the rest, takes holde where hee list, and so hangs to a bough, and so helpe all the rest, till they be gotten up."

What the American Museum would like to know is whether any living human being has really seen monkeys build a simian bridge of their own arms, bodies and tails, as Father de Acosta says he saw them do.

Professor Gudger has studied the subject with painstaking care and believes that Father de Acosta's tale has been handed down from one author to another. But he can find no scientist or native of the present day who will vouch for the truth of it.

Lionel Wafer, a companion of the celebrated navigator, Captain Dampier, in his book printed in London in 1699, says that in crossing the Isthmus they saw and killed a number of monkeys, and continues:

"They are a very waggish kind of Monkey, and plaid a thousand antick Tricks as we march'd at any time through the Woods, skipping from Bough to Bough, with the young ones hanging at the old ones Back, making Faces at us. To pass from top to top of high Trees, whose Branches are a little too far asunder for their Leaping, they will sometimes hang down by one another's Tails in a Chain; and swinging in that manner, the lower most catches hold of a Bough of the other Tree, and draws up the rest of them."

In 1862 another writer, Don Ramon Paez, going into detail as to just how the Monkey Bridge is made, explains it as follows:

"No less remarkable is their ingenious method of crossing torrents and other minor streams which they often encounter in their ceaseless perambulations through the forest. As among men, all cannot swim with equal facility, so it is also with monkeys; accordingly the leaders of the troop, generally the strongest of the party, climb to the spreading branches of some tree projecting over the stream; one of them then twists his tail firmly around a branch, and letting his body hang, seizes upon the tail of the nearest comrade, who in his turn performs the same operation with the next, and so on until a sort of chain or living pendulum is formed, which, in obedience to the laws of equilibrium oscillates slowly but constantly from their combined efforts to reach the opposite bank. This finally achieved, the last monkey secures himself to the most convenient tree. The others of the chain, now disengaged from the tree at the opposite side of the stream, wade through the water, each helped by his neighbor, assisted likewise by the current. Some are, however, occasionally drowned, the last one in the chain especially, which circumstance has probably given rise to the popular proverb, *el ultimo moro siempre se ahoga*—the last monkey is sure to be drowned."

Commenting on this statement of the distinguished traveller and naturalist, Professor Gudger writes:

"This account is very circumstantial, and if one reads Paez's book and sees how accurate in the main are his natural history observations, one feels inclined to lend credence. Then, too, how natural is the proverb about the drowning of the last monkey. At first I was inclined to think this a slip, for why was not the end of the chain on the other side of the river after the crossing as high above the water

as the originating end? A little thought, however, cleared up this point. The lowest monkey of the oscillating chain would lay hold of the first bush or tree or branch with which he would come in contact, and would complete the living bridge, but would be unable to climb any higher because of the great weight of the monkeys pulling on him. Hence, when the monkey who originated the chain let go, he would fall into the water."

Following the history of this reputed accomplishment of the South American monkeys, Professor Gudger quotes from a very modern American textbook, Holmes's "Fourth Reader," which was printed in 1897 and is probably still in use in some schools. Here the Monkey Bridge is not only pictured by the artists, but is described in most circumstantial detail, as follows:

"I was once sailing down the Amazon, and making short trips up the rivers that flow into it. One night we had ascended a little stream so far that the trees on the banks nearly met overhead, and our boat could go no farther. It was not prudent to go back in the dark. So we anchored in midstream.

"The air was full of strange sounds, made by strange birds and insects, which kept me awake until just before dawn, when I fell asleep in my chair on deck.

"Suddenly I felt a rough blow on my face, and became wide awake. I saw hanging from a tree, and swinging away into the gloom, something that looked like a huge black rope. The end of it had struck me. In a moment back it came, swinging in this time behind the vessel.

"The rope gave forth a chattering noise; it was alive. A moment more, and it was clear to me that here was a company of monkeys trying to cross the stream. The sight was so novel, the plan so daring, that at once I gave these queer bridge-makers my closest attention.

"They were hanging from a tall palm-tree that leaned out over the water. Three or four of the strongest had grasped the branches of this palm with their hands, feet and tails, and were holding on as if the fate of the monkey race depended on them.

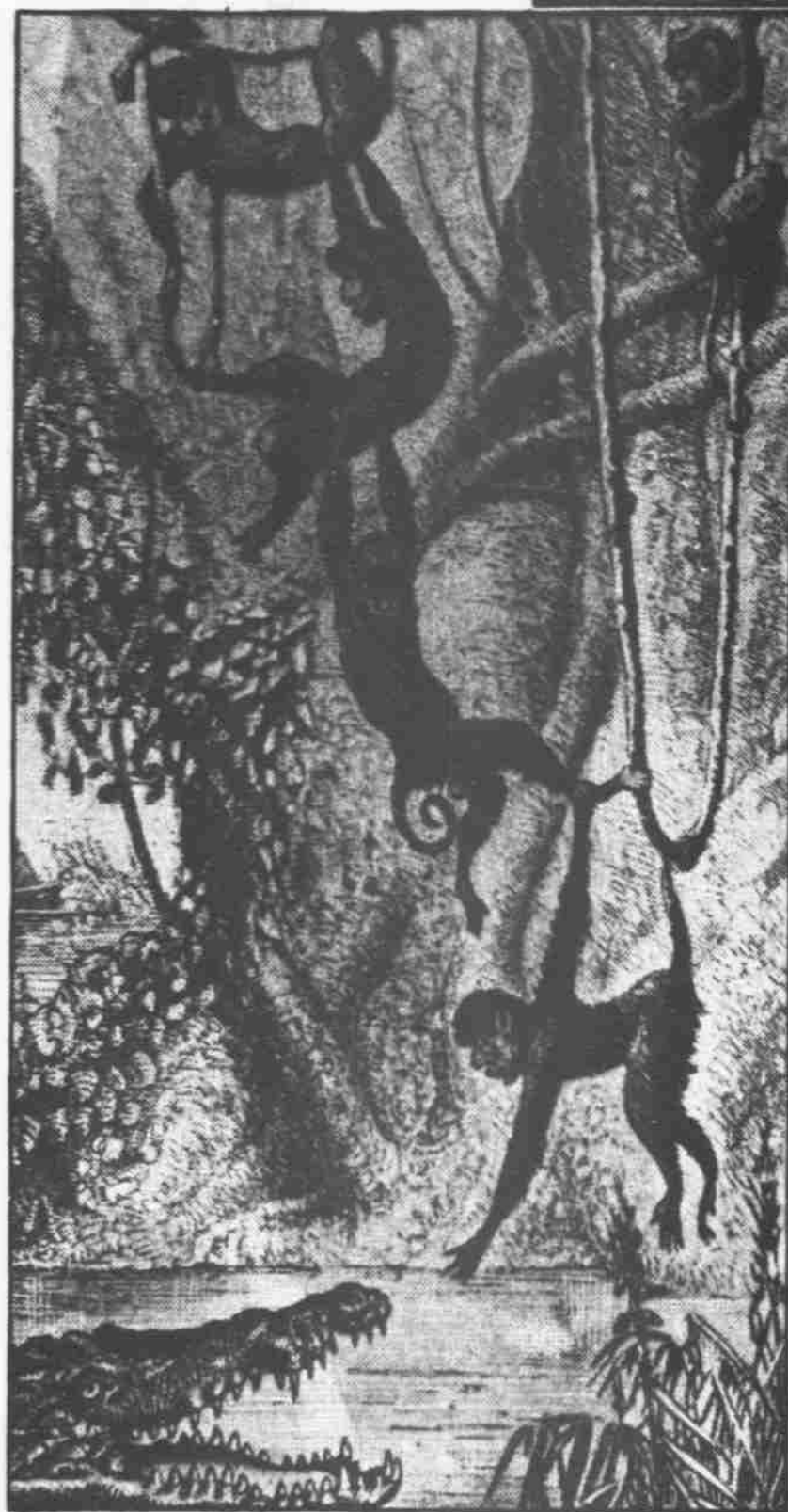
"Other monkeys had taken hold of these, and let themselves hang down as far as they could. Then others and still others, until there was a line thirty feet long and three or four monkeys deep. The last monkey of all did not cling to those above him, but was so held by them as to leave his arms and legs free. He was the gymnast of the troop, and the hero of the present exploit.

"The dangling line hung so near the trunk of the palm that the lowest had been able to push against it, and thus cause a little motion. Successive pushes had set the rope swinging toward the opposite side of the stream. It was on one of these swings, when the end of the rope had reached as far out as the middle of the stream, that I was struck in the face.

"Little by little the breathing, clinging pendulum kept gaining. Pretty soon it swung out so far that the leader caught a branch of a tree on the opposite bank, when, lo! there was a bridge in mid-air! At once there rose from all the line a chattering that must have been monkey cheers.

"As soon as the leader had made good his hold, two or three monkeys ran across to help him. This finished the bridge; so, without further ado, it was opened to the monkey public.

"Then there came out of the palm tree a noisy crowd of all ages. They ran across



The Above Illustration, from Henri Mouhot's "Travels in the Central Parts of Indo-China, Cambodia and Laos" (1864), Purports to Be Drawn from a Sketch by That Naturalist Showing the Way in Which Apes Tease and Torment Their Greatest Enemy, the Stealthy Crocodile, by Swinging About His Head and Tapping Him Now and Again, Until Some One of the Frolickers More Foolhardy or Less Agile Than the Rest Gets His Paw Caught in the Trap and Vanishes into the Alligator's Interior.

the bridge as best they could, some on all fours, some upright, some with young monkeys on their backs, and all waving their tails and briskly jabbering, as if they were shouting to those ahead. 'Make haste, or the bridge will break!'

"A very old monkey was the last to go over. Perhaps his limbs were stiff. Perhaps he could not see very well. It was certain that he had lost the fearlessness of his youth, for he picked his way along so slowly and nervously that I could not help laughing outright.

"Hearing so unusual a noise, the monkeys who were clinging to the palm did not wait for him, but let go and swung over to the other side. The old fellow narrowly escaped a ducking.

"Then followed a curious scene. No sooner had the bridge cleared the water than the monkeys loosened their grip upon one another. In less time than it takes to tell the story, the bridge dropped to pieces and—what never happens with a common bridge—the pieces betook themselves to the tops of the trees, and were soon out of hearing in the depth of the forest."

Professor Gudger has endeavored to corroborate these stories, but has been unable to find any traveler or explorer who has ever seen a monkey bridge, and he is, unable to hear of any reports from natives of the jungle who have claimed to have seen a monkey bridge.

Our Schoolboys Were Regaled in Their South American Geography Lessons by Illustrations of a Monkey Bridge Such as Is Shown in This Cut, Which Is Taken from Holmes's "Fourth Reader" (1897). Clinging to One Another's Tails So as to Form a Long Chain, It Was Said They Would Swing Pendulum Fashion Until the End "Athlete" Could Grasp a Tree on the Other Side of the Stream, After Which All the Mothers and Babies Would Scamper Across on the Heads and Backs of Their Accommodating Relatives.

In the course of his research in regard to the monkey bridge, Professor Gudger came across many other curious and interesting antics attributed to South American monkeys by various explorers, travelers, historians and writers. A French traveler, named Henri Mouhot, published a book in London in 1864, in which he gave this interesting episode, which was later copied in Bacon's "Illustrated Library of Travel, Exploration and Adventure," as follows:

"It is amusing, however, for one is interested in observing the habits of animals all over the world, to see the manner in which these creatures (crocodiles) catch the apes, which sometimes take a fancy to play with them. Close to the bank lies the crocodile, his body in the water, and only his capacious mouth above the surface, ready to seize anything that may come within reach. A troop of apes catch sight of him, seem to consult together, approach little by little, and commence their frolics, by turns actors and spectators. One of the most active or most impudent jumps from branch to branch, till within a respectful distance of the crocodile, when, hanging by one paw, and with the dexterity peculiar to these animals he advances and retires, now giving his enemy a blow with his paw, at another time only pretending to do so. The other apes, enjoying the fun, evidently wish to take a part in it; but the other branches being too high they form a sort of chain by laying hold of each other's paws, and thus swing backwards and forwards."

At the present stage of the investigation Professor Gudger is inclined to think Great Britain Rights Reserved.

that the explanation of the monkey bridge may be found in a careful analysis and study of the various reports of writers and travellers. Professor Gudger selects the details as presented by the account in Holmes's "Fourth Reader."

Investigation shows that this was written by Charles Frederick Holder, a naturalist and a man of high standing, a writer of many books and a member of many distinguished scientific societies. Dr. Holder died in 1915.

Summing up his conclusion, Professor Gudger says:

"Let us examine Holder's account more closely. First, it was not yet dawn, things could not be seen clearly; second, the stream was so small that the trees almost met overhead; third, the monkeys might easily have been hanging to limbs and making swinging leaps across the narrow stream; fourth, in these tropical countries the vegetation along the streams forms such a dense interwoven jungle that there is no space on the landward side for such a chain to swing back from the bank to get oscillation enough to carry it across the stream; and, finally, this account attributes more collective intelligence to monkeys than they have ever been known to show.

"It seems to me that the possible explanation is to be found in the third point just indicated. Individual monkeys certainly make use of swinging branches and of great palm leaves to enable them to bridge over the space from one tree to another. Using such a swinging fulcrum for a 'take-off' they have been known to leap thirty feet, alighting, of course, at a lower level than the starting point. A procession of monkeys making such leaps from the same point in succession, especially if some were females carrying young, might look like a living chain.

"I have had the pleasure of discussing the matter with Messrs. Leo E. Miller and George K. Cherrie, of the American Museum of Natural History, and few men in the United States have done more exploring work in northern South America. Furthermore, they are not the ordinary type of travellers, but are collectors with highly trained powers of observation. They think that there is nothing in the 'monkey bridge story,' but that it has come about in a perfectly natural way through observation of a procession of monkeys crossing a ravine or stream on a pendent liana."

But science would like to settle the question definitely. If any reader of this page has any positive information on the subject the authorities of the American Museum would be glad to hear from him.

